

# Office of Research and Development National Health and Environmental Effects Research Laboratory

# **Mid-Continent Ecology Division (MED)**

#### GILMAN D. VEITH

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(revised 08/16/02)

#### **EDUCATION**

<u>Degree</u>	<u>Year</u>	<u>Major</u>	Institution
Ph.D.	1970	Water Chemistry	University of Wisconsin, Madison, WI
Woodrow Wilson Fellow	1967	Analytical Chemistry	Cornell University, Ithaca, NY
B.S.	1966	Chemistry	Augustana College, Sioux Falls, SD

#### **EXPERIENCE**

#### **Senior Scientist**

<u>Dates</u> <u>Employer</u>

2002 - Present U.S. Environmental Protection Agency

Mid-Continent Ecology Division

Duluth, MN 55804

# **Associate Director for Ecology**

<u>Dates</u> <u>Employer</u>

1995 - 2002 U.S. Environmental Protection Agency

National Health & Environmental Effects Laboratory (MD-87)

Research Triangle Park, NC 27711

# **Division Director**

<u>Dates</u> <u>Employer</u>

1987 - 1995 U.S. Environmental Protection Agency

Environmental Research Laboratory-Duluth

6201 Congdon Boulevard

Duluth, MN 55804

#### **Associate Division Director of Research**

<u>Dates</u> <u>Employer</u>

1984 - 1987 U.S. Environmental Protection Agency

Environmental Research Laboratory-Duluth

6201 Congdon Boulevard

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#### **Toxic Substances Research Branch Chief**

<u>Dates</u> <u>Employer</u>

1981 - 1984 U.S. Environmental Protection Agency

Environmental Research Laboratory-Duluth

6201 Congdon Boulevard

Duluth, MN 55804

Brief Description of Position: Directed six projects for Office of Toxic Substances and served as the QSAR

Program Manager.

#### **Research Chemist**

<u>Dates</u> <u>Employer</u>

1972 - 1981 U.S. Environmental Protection Agency

Environmental Research Laboratory-Duluth

6201 Congdon Boulevard

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# **Assistant Professor, Water Chemistry Program**

Dates Employer

1970 - 1972 University of Wisconsin

Madison, WI

### PROFESSIONAL ACTIVITIES/APPOINTMENTS

Science Council, U.S. EPA Office of Research and Development (1995 - 2002)

F. C. Donder Chair, University of Utrecht Research Institute of Toxicology, NL (1994 - 1995)

Steering Committee, EPA/ECC Program on Toxic Chemicals, European Chemical Bureau (1991 - Present)

Advisory Board, International Workshop on QSAR (1998 - Present)

# **PUBLICATIONS**

#### **Peer-Reviewed Journals**

Mekenyan, O.G., G.T. Ankley, G.D. Veith, and D.J. Call. 1996. A QSAR evaluation of Ah receptor binding of halogenated aromatic xenobiotic. Environ. Health Perspect. 104:1302-1310.

Mekenyan, O.G., J.W. Schultz, G.D. Veith, and V.B. Kamenska. 1996. "Dynamic" QSAR for semicarbazide-induced mortality in frog embryo. J. Appl. Toxicol. (in press).

Veith, G.D., O.G. Mekenyan, G.T. Ankley, and D.J. Call. 1995. QSAR evaluation of  $\alpha$ -terthienyl phototoxicity. Environ. Sci. Technol. 29:1267-1272.

Veith, G.D., O.G. Mekenyan, G.T. Ankley, and D. J. Call. 1995. A QSAR analysis of substituent effects on the photoinduced acute toxicity of PAHs. Chemosphere 30:2129-2142.

Mekenyan, O.G., G.D. Veith, S.P. Bradbury, and N. Zaharieva. 1995. SAR models for metabolic activation: Stability of organic cation intermediates. Quant. Struct.-Act. Relat. 14:264-269.

Bradbury, S.P., O.G. Mekenyan, G.D. Veith, and N. Zaharieva. 1995. SAR models for futile metabolism: One-electron reduction of quinones, phenols and nitrobenzenes. SAR QSAR Environ. Res. 4:109-124.

Mekenyan, O.G., G.T. Ankley, G.D. Veith, and D.J. Call. 1995. QSAR for photoinduced toxicity of aromatic compounds. SAR QSAR Environ. Res. 4:139-145.

Mekenyan, O.G. and G.D. Veith. 1995. Synergism between QSAR modeling and physic-chemical principles. SAR QSAR Environ. Res. 4:155-165.

Mekenyan, O.G. and G.D. Veith. 1994. The electronic factor in QSAR: MO-parameters, competing interactions, reactivity and toxicity. SAR QSAR Environ. Res. 2:129-143.

Mekenyan, O.G., J.M. Ivanov, G.D. Veith, and S.P. Bradbury. 1994. Dynamic QSAR: A new search for active conformations and significant stereoelectronic indices. Quant. Struct.-Act. Relat. 13:302-307.

Mekenyan, O.G., J.M. Ivanov, G.D. Veith, and S.P. Bradbury. 1994. Relative sensitivity of three freshwater benthic macroinvertebrates to ten contaminants. Arch. Environ. Contam. Toxicol. 28:281-286.

Mekenyan, O.G., G.T. Ankley, G.D. Veith, and D.J. Call. 1994. QSAR estimates of excited states and photoinduced acute toxicity of polycyclic aromatic hydrocarbons. SAR QSAR Environ. Res. 2:237-247.

Mekenyan, O.G., G.T. Ankley, G.D. Veith, and D.J. Call. 1994. QSARs for photoinduced toxicity: I. Acute lethality of polycyclic aromatic hydrocarbons to *Daphnia magna*. Chemosphere 28:567-582.

Veith, G.D. and Mekenyen, O.G. 1993. A QSAR approach to estimating the aquatic toxicity of soft electrophiles [QSAR for soft electrophiles] Quant. Struct.-Act. Relat. 12:349-356.

Mekenyan, O.G., G.D. Veith, S.P. Bradbury, and C. Russom. 1993. Structure-toxicity relationships for  $\alpha$ ,  $\beta$ -unsaturated alcohols in fish. Quant. Struct.-Act. Relat. 12:132-136.

Niemi, G.J., S.C. Basak, G.D. Veith, and G. Grunwald. 1992. Prediction of octanol/water partition coefficient ( $K_{ow}$ ) with algorithmically derived variables. Environ. Toxicol. Chem. 11:893-900.

Basak, S.C., G.J. Niemi, and G.D. Veith. 1991. Predicting properties of molecules using graph invariants. J. Math. Chem. 7:243-272.

- Veith, G.D. and S.J. Broderius. 1990. Rules for distinguishing toxicants that causes type (I) and type (II) narcosis syndromes. Environ. Health Perspect. 87:207-211.
- Basak, S., G. Niemi, and G.D. Veith. 1990. Optimal characterization of structure for prediction of properties. J. Math. Chem. 4:185-205.
- Veith, G.D., R.L. Lipnick, and C.L. Russom. 1989. The toxicity of acetylenic alcohols to the fathead minnow, *Pimephales promelas*: Narcosis and proelectrophile activation. Xenobiotica 19:555-565.
- Veith, G.D., B. Greenwood, R.S. Hunter, G.J. Niemi, and R.R. Regal. 1988. The intrinsic dimensionality of chemical structure space. Chemosphere 17:1617-1630.
- Niemi, G.J., G.D. Veith, R.R. Regal, and D.D. Vaishnav. 1987. Structural features associated with persistent and degradable chemicals. Environ. Toxicol. Chem. 6:515-527.
- Basak, S.C., V.R. Magnuson, G.J. Niemi, R.R. Regal, and G.D. Veith. 1987. Topological indices: Their nature, mutual relatedness, and applications. Math. Model. 8:300-305.
- Kamlet, M.J., R.M. Doherty, M.H. Abraham, G.D. Veith, D.J. Abraham, and R.W. Taft. 1987. Solubility properties in polymers and biological media. 8. An analysis of the factors that influence toxicities of organic nonelectrolytes to the Gold Orfe (*Leuciscus idus melanotus*). Environ. Sci. Technol. 21:149-155.
- Niemi, G.J., T.E. Davis, G.D. Veith, and B. Vieux. 1986. Organochlorine chemicals residues in herring gulls, ring-billed gulls, and common terns of western Lake Superior. Arch. Environ. Contam. Toxicol. 15:313-320.
- Kamlet, M.J., R.M. Doherty, G.D. Veith, R.W. Taft, and M.H. Abraham. 1986. Solubility properties of polymers and biological media. 7. An analysis of toxicant properties that influence inhibition of bioluminescence in *Photobacterium phosphorem* (The Microtox. Test). Environ. Sci. Technol. 20:690-694.
- Burkhard, L.P., D.W. Kuehl, and G.D. Veith. 1985. Evaluation of reverse phase liquid chromatography/mass spectrometry for estimation of n-octanol/water partition coefficients for organic chemicals. Chemosphere 14:1551-1560.
- Thurston, R.V., T.A. Gilfoil, E.L. Meyn, R.K. Zajdel, T.I. Aoki, and G.D. Veith. 1985. Comparative toxicity of ten organic chemicals to ten common aquatic species. Water Res. 19:1145-1155.
- McKim, J., P. Schmieder, and G. Veith. 1985. Adsorption dynamics of organic chemical transport across trout gills as related to octanol-water partition coefficient. Toxicol. Appl. Pharmacol. 77:1-10.
- Veith, G.D., D. DeFoe, and M. Knuth. 1985. Structure-activity relationships for screening organic chemicals for potential ecotoxicity effects. Drug Metab. Rev. 15:1295-1303.
- Veith, G.D, M.L. Knuth, and M.D. Hoglund. 1984. Quantitative analysis of 68 polar compounds from ten chemical classes by direct aqueous injection gas chromatography. J. Chromatogr. 285:153-160.
- Veith, G.D., D.J. Call, and L.T. Brooke. 1983. Structure-toxicity relationships for the fathead minnow, *Pimephales promelas*: Narcotic industrial chemicals. Can. J. Fish. Aquat. Sci. 40:743-748.
- Kuehl, D.W., K.L. Johnson, B.C. Butterworth, E.N. Leonard, and G.D. Veith. 1981. Quantification of octachlorostyrene and related compounds in Great Lakes fish by gas chromatography-mass spectrometry. J. Great Lakes Res. 7:330-335.
- Veith, G.D., D.W. Kuehl, E.N. Leonard, K. Welch, and G. Pratt. 1981. Fish, wildlife, and estuaries: Polychlorinated biphenyls and other organic chemical residues in fish from major United States watersheds near the Great Lakes, 1978. Pestic. Monit. J. 15:1-8.

Welch, K.J., D.W. Kuehl, E.N. Leonard, G.D. Veith, and N.D. Schoenthal. 1981. Background hydrocarbon residues in fishes from the Great Lakes and eastern Montana. Bull. Environ. Contam. Toxicol. 26:724-728.

Veith, G.D. and D.W. Kuehl. 1981. Automated gel-permeation system for removal of lipids in gas chromatography/mass spectrometric analysis of fatty tissues for xenobiotic chemicals. Anal. Chem. 53:1132-1133.

Kuehl, D.W., E.N. Leonard, K.J. Welch, and G.D. Veith. 1980. Identification of hazardous organic chemicals in fish from the Ashtabula River, Ohio, and Wabash River, Indiana. J. Assoc. Off. Anal. Chem. 63:1238-1244.

Veith, G.D., D.L. DeFoe, and B.V. Bergstedt. 1979. Measuring and estimating the bioconcentration factor of chemicals in fish. J. Fish. Res. Board Can. 36:1040-1048.

Veith, G.D., D.W. Kuehl, E.N. Leonard, F.A. Puglisi, and A.E. Lemke. 1979. Fish, wildlife, and estuaries: Polychlorinated biphenyls and other organic chemical residues in fish from major watersheds in the United States, 1976. Pestic. Monit. J. 13:1-11.

Spehar, R.L., G.D. Veith, D.L. DeFoe, and B.V. Bergstedt. 1979. Toxicity and bioaccumulation of hexachlorocyclopentadiene, hexachloronorbornadiene, and heptachloronorbornene in larval and early juvenile fathead minnows, *Pimephales promelas*. Bull. Environ. Contam. Toxicol. 21:576-583.

Veith, G.D., N.M. Austin, and R.T. Morris. 1979. A rapid method for estimating log P for organic chemicals. Water Res. 13:43-47.

Skea, J.C., H.A. Simonin, H.J. Dean, J.R. Colquhoin, J.J. Spagnoli, and G.D. Veith. 1979. Bioaccumulation of aroclor 1016 in Hudson River. Fish. Bull. Environ. Contam. Toxicol. 22:332-336.

DeFoe, D.L., G.D. Veith, and R.W. Carlson. 1978. Effects of aroclor 1248 and 1260 on the fathead minnow (*Pimephales promelas*). J. Fish. Res. Board Can. 35:997-1002.

Veith, G.D., D.W. Kuehl, F.A. Puglisi, G.E. Glass, and J.G. Eaton. 1977. Residues of PCBs and DDT in the western Lake Superior ecosystem. Arch. Environ. Contam. Toxicol. 5:487-499.

Veith, G.D. and L.M. Kiwus. 1977. Exhaustive steam-distillation and solvent-extraction unit for pesticides and industrial chemicals. Bull. Environ. Contam. Toxicol. 17:631-636.

Kuehl, D.W., H.L. Kopperman, G.D. Veith, and G.E. Glass. 1976. Isolation and identification of polychlorinated styrenes in Great Lakes fish. Bull. Environ. Contam. Toxicol. 6:127-132.

Veith, G.D. 1975. Baseline concentrations of polychlorinated biphenyls and DDT in Lake Michigan fish, 1971. Pestic. Monit. J. 9:21-29.

Veith, G.D. and V.M. Comstock. 1975. Apparatus for continuously saturating water with hydrophobic organic chemicals. J. Fish. Res. Board Can. 32:1849-1851.

Veith, G.D., D.W. Kuehl, and J. Rosenthal. 1975. Preparative method for gas chromatographic/mass spectral analysis of trace quantities of pesticides in fish tissue. J. Assoc. Off. Anal. Chem. 58:1-5.

Dube, D.J., G.D. Veith, and G.F. Lee. 1974. PCBs in treatment plant effluents. J. Water Pollut. Control Fed. 46:966-972.

Veith, G.D. 1972. Recent fluctuations of chlorobiphenyls (PCBs) in the Green Bay, Wisconsin, region. Environ. Health Perspect. 1:51-54.

Veith, G.D. and G.F. Lee. 1971. Chlorobiphenyls in the Milwaukee River. Water Res. 5:1107-1115.

Viste, A.E., D.A. Holm, P.L. Wang, and G.D. Veith. 1971. Kinetics and mechanisms of the silver (II) - Phosphorus acid reaction. Inorg. Chem. 10:631-633.

Veith, G.D. and G.F. Lee. 1971. Role of lake sediments in the water chemistry of toxaphene. Environ. Sci. Technol. 5:230-234.

Hughes, R.A., G.D. Veith, and G.F. Lee. 1970. Gas chromatographic determination of toxaphene in natural waters, fish and lake sediments. Water Res. 4:547-558.

Veith, G.D. and G.F. Lee. 1970. A review of chlorobiphenyl contamination of natural waters. Water Res. 4:265-269.

Veith, G.D., E. Guthals, and A.E. Viste. 1967. Kinetics of the reaction of silver (II) with dithionate. Inorg. Chem. 6:667-669.

#### Peer-Reviewed Book Chapters/Symposium Proceedings

Mekenyan, O.G., G.T. Ankley, G.D. Veith, and D.J. Call. 1997. Photo-induced toxicity of PAHS: QSAR models and environmental significance. In: *Geosciences and Water Resources: Environmental Data Modeling*. Bardinet, C. and J.-J. Royer (eds.). Springer-Verlag, Berlin, Germany.

Hunter, R., G.J. Niemi, A. Pilli, and G.D. Veith. 1990. Aquatic information and retrieval (AQUIRE) database system. In: *Envirotech Vienna 1990*. W. Pillmann (ed.). International Society for Environmental Protection, Vienna, Austria.

Niemi, G.J. and G.D. Veith. 1989. An approach for development of structure-biodegradable relationships of organic chemicals. In: *Aquatic toxicology and Environmental Fate, 11th Volume*, ASTM STP 1007. Suter, G.W. II and M.A. Lewis (eds.). American Society for Testing and Materials, Philadelphia, PA. pp. 459-467.

Basak, S.C., G. Niemi, and G.D. Veith. 1989. Recent developments in the characterization of chemical structure using graph-theoretic indices. In: *Computational Chemical Graph Theory*. Rouvray, D.H. (ed.). Nova, NY. (in press.)

Holcombe, G.W., G.L. Phipps, and G.D. Veith. 1988. Use of aquatic lethality tests to estimate safe toxicant concentrations for initial ecological risk assessments. In: *Aquatic Toxicology and Environmental Fate, 11th Volume*, ASTM STP 1007. Suter, G.W. II and M.A. Lewis (eds.). American Society for Testing and Materials, Philadelphia, PA. pp. 442-458.

Veith, G.D. and S.J. Broderius. 1987. Structure-toxicity relationships for industrial chemical causing type (II) narcosis syndrome. In: *QSAR in Environmental Toxicology - II*. Kaiser, K.L.E. (ed.). D. Reidel Publishing, Dordrecht, Holland. pp. 385-391.

Niemi, G.J., R.R. Regal, and G.D. Veith. 1985. Applications of molecular connectivity indexes and multivariate analysis in environmental chemistry. In: *Environmental Applications of Chemometrics*. Breen and Robinson (eds.). ACS Series 292, Washington, DC. pp. 148-159.

Veith, G.D. and P. Kosian. 1983. Estimating bioconcentration potential from octanol/water partition coefficients. In: *Physical Behavior of PCBs in the Great Lakes*. MacKay, D., D. Paterson, S.J. Eisenreich, and M.S. Simmons (eds.). Ann Arbor Science Publishers, Ann Arbor, MI. pp. 269-282.

Veith, G.D., D.J. Call, and L.T. Brooke. 1983. Estimating the acute toxicity of narcotic industrial chemicals to fathead minnows. In: *Aquatic Toxicology and Hazard Assessment: 6th Symposium*, ASTM STP 802. Bishop, W.E., R.D. Cardwell, and B.B. Heidolph (eds.). American Society for Testing and Materials, Philadelphia, PA. pp. 90-97.

Veith, G.D., K.J. Macek, S.R. Petrocelli, and J. Carroll. 1980. An evaluation of using partition coefficients and water solubility to estimate bioconcentration factors for organic chemicals in fish. In: *Aquatic Toxicology*, ASTM STP 707. American Society for Testing and Materials, Philadelphia, PA. pp. 116-129.

Kuehl, D.W., G.D. Veith, and E.N. Leonard. 1978. Brominated compounds found in waste-treatment effluents and their capacity to bioaccumulate. In: *Water Chlorination Environmental Impact and Health Effects, Volume 2*. Jolley, R.L., H. Gorchev, and D.H. Hamilton, Jr. (eds.). Ann Arbor Science Publishers, Ann Arbor, MI. pp. 175-192.

Veith, G.D. and N.M. Austin. 1976. Detection and isolation of bioaccumulable chemicals in complex effluents. In: *Identification and Analysis of Organic Pollutants in Water*. Keith, L.A. (ed.). Ann Arbor Science, Ann Arbor, MI. pp. 297-304.

# **EPA Reports**

Bradbury, S.P., C.L. Russom, and G.D. Veith. 1993. Report on prototype expert system to predict toxic mechanisms from chemical structure. EPA600/X-93/018. U.S. Environmental Protection Agency, Duluth, MN.

Veith, G.D. 1992. Predicting the toxicity of reactive industrial chemicals and carcinogens: I. Development of QSAR for soft electrophiles. EPA600/X-92/141. U.S. Environmental Protection Agency, Duluth, MN.

Hunter, R., G.J. Niemi, A. Pilli, and G.D. Veith. 1990. Aquatic information and retrieval (AQUIRE) database system. EPA600/D-91/079. U.S. Environmental Protection Agency, Duluth, MN.

Niemi, G.J., S. Basak, and G.D. Veith. 1989. A theoretical and computational approach to chemical evaluation based on structure-activity relationships. Proceedings of the International Society of Environmental Protection, Vienna, Austria. EPA-600/D-89/190.

Veith, G.D. 1989. Unified QSAR strategy for predictive ecotoxicology and initial environmental risk assessment. U.S. Environmental Protection Agency, Duluth, MN (internal report).

Veith, G.D. 1988. Report on methods for leachate toxicity characterization. EPA-600/X-88-322. U.S. Environmental Protection Agency, Duluth, MN (internal report).

Niemi, G.J. and G.D. Veith. 1988. Approach for development of structure-biodegradation relationships of organic chemicals. EPA-600/D-88-047. U.S. Environmental Protection Agency, Duluth, MN.

Phipps, G.L., G.W. Holcombe, and G.D. Veith. 1988. Report on species/species extrapolations from freshwater organism comparative toxicology data base. EPA-600/X-88-265. U.S. Environmental Protection Agency, Duluth, MN (internal report).

Nendza, M. (G.D. Veith, P.O.). 1988. QSAR modeling of the ERL-D fathead minnow acute toxicity database. Fraunhofer Institute for Umweltchemie and Okotoxikologie, D5948, Schmallenburg, West Germany. pp. 1-15.

Schultz, T.W., G.L. Phipps, and G.D. Veith. 1987. Report on low cost amphibian test for specific cytotoxic effects: Part I. The toxic and teratogenic effects of hydrazines. U.S. Environmental Protection Agency, Duluth, MN.

Anderson, E., G.D. Veith, and D. Weininger. 1987. SMILES: A line notation and computerized interpreter for chemical structures. EPA-600/M-87-021. U.S. Environmental Protection Agency, Duluth, MN.

Veith, G.D., G.W. Holcombe, and G.L. Phipps. 1987. Use of aquatic lethality tests to estimate safe chronic concentrations of chemicals in initial ecological risk assessments. ASTM Proceedings. Cincinnati, OH.

Veith, G.D. 1986. Report on a comprehensive structure-toxicity method to estimate the toxicity of chemicals to aquatic organisms. ERL-DUL-1123. U.S. Environmental Protection Agency, Duluth, MN.

Veith, G.D. 1981. State-of-the-art of structure-activity methods development. PB81-187239. National Technical Information Service, Springfield, VA.

Kosian, P., A. Lemke, K. Studders, and G.D. Veith. 1981. The precision of the ASTM bioconcentration test. PB-168932. National Technical Information Service, Arlington, VA.

Veith, G.D. and R.T. Morris. 1978. A rapid method for estimating log P for organic chemicals. EPA-600/3-78-049. U.S. Environmental Protection Agency, Duluth, MN.

Spehar, R.L., G.D. Veith, D.L. DeFoe, and B.A. Bergstedt. 1977. A rapid assessment of the toxicity of three chlorinated cyclodiene insecticide intermediates to fathead minnows. EPA-600/3-77-099. U.S. Environmental Protection Agency, Duluth, MN.

Veith, G.D. and D.E. Konasewich. 1975. Symposium on structure-activity correlations in studies of toxicology and bioconcentrations with aquatic organisms 1-347. Great Lakes Research Advisory Board. Windsor, Ontario.

Haile, C.L. and G.D. Veith. 1975. Chlorinated hydrocarbons in the Lake Ontario ecosystem (IFYGL). EPA-600/3-75-022. U.S. Environmental Protection Agency, Duluth, MN.

Hedtke, S.F., F.A. Puglisi, G.D. Veith, J.E. Poldoski, D.W. Kuehl, and L.F. Mueller. 1974. The effects of waste oil on freshwater aquatic life. Report to the Congress, Waste Oil Study. U.S. Environmental Protection Agency, Duluth, MN. pp. 213-267.

Lee, G.F. and G.D. Veith. 1971. Effects of thermal discharges on the chemical parameters of water quality and eutrophication. Proceedings of Identification and Measurement of Environmental Pollutants. Ottawa, Ontario, Canada. pp. 287-293.

Veith, G.D. and G.F. Lee. 1971. Chlorobiphenyls in fish from the Milwaukee River and Lake Michigan near Milwaukee. In: Proceedings of the 14th Conference on Great Lakes Research. pp. 157-169.

Veith, G.D. and G.F. Lee. 1970. Position paper on drinking water standards for chlorobiphenyls. Requested by U.S. Public Health Service.

#### **OTHER**

#### **Oral Presentations**

Bradbury, S.P. and G.D. Veith. 1995. Structure activity relationships for one-electron potentials of quinones, nitrobenzenes, and phenols. SETAC World Congress, Vancouver, BC, November 5-9.

Mekenyan, O.G., G.T. Ankley, G.D. Veith, and D.J. Call. 1994. QSARS for photo-induced toxicity of polycyclic aromatic hydrocarbons (PAHs). SETAC, Denver, CO, October 30-November 4.

Russom, C.L., S.P. Bradbury, G.D. Veith, and J. Neimi. 1992. The ASTER system: An integration of U.S. EPA's AQUIRE database and QSAR system for use in ecological risk assessments. ASTM 2nd Symposium on Environmental Toxicology and Risk Assessment (Aquatic, Plant and Terrestrial), Pittsburgh, PA, April 26-29.

Niemi, G.J., S. Basak, S.P. Bradbury, S.J. Broderius, and G.D. Veith. 1991. Acute toxicity predication directly from structure. SETAC 12th Annual Meeting, Washington, DC, November 3-7.